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Contents.

The Planting Expert continues his interesting report of his tour in the Travancore High Range, which may unfortunately be interrupted by his enforced visit to inspect those Estates in Mysore attacked by Green Bug, and his return will depend on the severity and extent of the area attacked.

The Scientific Department publishes useful suggestions to destroy pests, and it is specially noted that fire is the best means of exterminating them. Mr. Nicolls has done good service in drawing attention to the damage done by the caterpillar and the best way of reducing it.

This issue is largely taken up with reports of District Association Meetings—three of which are published. The report of the Anamalai Planters' Association is continued and finished in this issue. Taken altogether, it is a very interesting report.

The Wynad Planters' Association in offering to subscribe towards the cost of an appeal under the Madras Labour Law by a Nilgiri Planter set a very good example in showing that all planters' interests are identical in this matter of labour, but as the subject is *sub-judice* we refrain from commenting on it.

Two short reports of the Kuman Devan Planters' Association find place in this week's issue and we trust that united action between the Peernade Association and the Kuman Devan Association supported by the Planting Member will have the desired effect of getting the Theni Bridge completed. The Chairman spoke very openly on the matter.

We have received the second number of the *Ceylon Planters' Gazette* which is mainly taken up with the Ceylon Labour Commissioner's first report. It is a very comprehensive statement. The total number of copies despatched to the various districts in Ceylon alone from Southern India through the Ceylon Commission in 1912 totals 93,925 and a large increase is anticipated in 1913. The Ceylon Commissioner concludes his report with these words "Recruiting within the planting area of the South Indian Estates is both unnecessary and indefensible and I am using the influence of this Commission to prevent it."

Scientific Officer's Papers.**CXVII.—REPORT ON A TOUR IN TRAVANCORE HIGH RANGE.
(Continued.)****GREEN MANURES.**

The fertility of a soil largely depends on the amount of organic matter contained in it, and this with its accompanying Nitrogen is very likely to be a dominating factor in Tea. This organic matter is a medium for the activities of bacteria which by their life processes manufacture nutrient solutions which serve as food to the Tea plant. It cannot be said definitely what percentage of organic matter should be present in the soil to produce Tea, but as a rule bushes grow most vigorously in a soil which contains a high percentage of this material, and as the general tendency of all cultivated soils is to lose organic matter this is one of the first things to try when the Tea begins to deteriorate. It can be easily and cheaply supplied to the soil by means of Green manures, and this class of fertiliser has proved most valuable under a great many different conditions and in a great many countries.

The best kind of plant to use for a green manure is a Leguminous one because these particular kinds of plants are able to obtain Nitrogen from the air through the medium of bacteria contained in nodules on their roots, and this Nitrogen can be transferred to the soil by cutting and digging them in at the right time.

On the subject of Green Manuring for Tea I cannot do better than quote from an article by Dr. Hope and Mr. Tunstall in a recent number of the *Quarterly Journal of the Scientific Department of the Indian Tea Association* (IV, 1912). These authors say:—

"When a good crop of 'jungle' springs up naturally after each round of hoeing and is buried in by the next round, this obviously affords a valuable means of adding organic matter to the soil. On gardens which are fortunate enough to be well supplied with labour the mistake is sometimes made of hoeing too frequently, with the result that practically no jungle is permitted to grow. This would be very well if the land were hoed with the object of keeping down jungle in order that a suitable green crop might grow instead, but it is usually done not with this purpose in view, but because the opinion exists that hoeing cannot be overdone. This is a mistake. Consequently on such gardens the excessive cultivation tends to exhaust the soil rapidly and the estate is living on its capital.

"One aim of green manuring is to enrich the soil in respect of Nitrogen. Only certain leguminous plants are capable of doing this, for they alone have the root nodules which harbour the species of bacteria which actually promote the fixation of Nitrogen. Consequently, serving as they do a double purpose, that of supplying organic matter and nitrogen, leguminous plants chiefly are used as green crops. The nitrogen which a soil acquires by the growth of a leguminous crop is not fixed in amount and depends upon other things beside the actual weight and composition of the crop, for, it must be remembered that the total nitrogen in the crop is the sum of that which is taken from the soil by the roots and of the atmospheric nitrogen which is fixed by the bacteria of the root nodules and the proportions of the whole supplied from each source is not constant. If the soil contains so large a supply of available nitrogen that the plant can flourish without fixation of atmospheric nitrogen the root nodule bacteria becomes inoperative and the nodules are few and small yet the crop may be good. If, on the other hand, the soil is poor in nitrogen but is rich in other respects, large nodules develop and the ultimate addition of atmospheric nitrogen to the soil may

be considerable though the crop may be poorer than in the above instance. In some cases, however, the soil may be too poor to provide other constituents necessary to the plant, such as potash, phosphates, &c., and a poor crop only is obtained and no opportunity is afforded of enriching the soil to any extent in respect of nitrogen."

"An excellent opportunity is here afforded for the skilful use of manures. Treating the soil with a manure containing potash or phosphates and no nitrogen for the purpose of enriching the soil in respect of nitrogen may be a new idea to many, particularly to those whose only idea of manuring is to apply periodically the amount of nitrogen, phosphoric acid, and potash which they calculate has been removed by the bushes since the previous application, but the manuring of green crops, and especially of such as are leguminous is an extremely sound method of promoting fertility of the soil."

The question of the proper legume to grow in any soil is one that must be determined largely by experiment. In all cases it should be the legume that grows most luxuriantly upon soils not particularly well fertilised and which at the same time produces the most abundant crop of nodules upon its roots. These factors will depend upon climate, the chemical nature of the soil, and the variety of soil bacteria. In selecting the legume all the factors within reach must be taken into consideration. Some species grow better in some climates than others, and certain soils seem to be for some reason better adapted to certain species quite independent of the question of the presence of the proper soil bacteria.

Green manuring is of particular value in sandy loose soils where the humus is scanty. In such soils so rapid is the draining that it is sometimes difficult to get fertilisers to remain in the soil long enough for their proper assimilation by the plant. The use of legumes dug in to furnish a mass of decaying vegetation greatly improves the texture of the soil, and will in time, give a fair humus content.

No value accrues from green manuring unless thorough decomposition occurs. For this reason it is generally best to dig in the leguminous crop before it has fully matured for then it has assimilated most of its nitrogen but has not become too bulky for proper decay in the soil. In the case of crops like *Crotalaria* it is best to cut them about the time they begin to throw out flower spikes.

PRUNING AND PLUCKING.

It would appear that if manures are applied to tea they should be applied either before or at the time of pruning. When applied before, the object is to get a good growth of wood on which to prune, and a big healthy root system to start the pruned bush.

Manuring is expensive especially in a district like this where transport expenses are very heavy and so every effort must be made to get the utmost from the manures applied and it must be remembered that manuring, pruning and plucking are all parts of the same problem. All knots should be removed so as to leave a clean run of sap to enable the bush to get the utmost value out of the plant food which has been given to it, and plucking should be light after pruning. Good and careful pruning is a necessary part of the expense of manuring, but both have been proved to pay if properly done.

Finally, I would point out that it is better to begin manuring too early than too late. It is comparatively easy to bring a field of tea back to vigour when it is just beginning to show signs of deterioration but very difficult to do so when it has really deteriorated.

(To be continued.)

RUDOLPH D. ANSTEAD, *Planting Expert.*

THE SCIENTIFIC DEPARTMENT, U.P.S.I.

Tea Pests.—Specimens of the Faggott-worm, *Clania crameri*, have been sent into this office recently. This is a brown caterpillar which cuts off short lengths of young twigs and fastens them together parallel to each other. These cases, or 'faggotta,' vary in length from half an inch to three inches in length, and from their shelter the caterpillars feed by protruding the head and thorax from one end. At the slightest alarm they withdraw into the case. In this particular instance the planter who sends the specimens reports that the pest began in November last and that in some places it has stripped every twig off big bushes while one field of 48 acres has been so badly attacked that no flush is got off it. It has also appeared in fields just ready for tipping when it does considerable damage. It is attacking the bark of the trees as well as the foliage and is on the *Grevilleas* as well as the tea. The only cure is to collect the faggott cases and burn them and there is nothing to add to the recommendations of Watt and Mann in their book on *The Pests and Blights of the Tea Plant*, which are as follows:—

"It should be recollected that the female is a wingless creature that never leaves her house, so that old and dead looking cases, as well as those seen moving about, should be collected, since the former may contain eggs. Mr. Cotes very properly remarks that 'the most remarkable feature about the caterpillars is their extraordinary vitality. Indeed, they will withstand an amount of rough handling which would be fatal to the larvae of almost any other group of moths. The point is an important one in considering how best to dispose of what are brought in by coolies.' All bags collected should in fact be burned in the boiler fire."

This is the second caterpillar pest reported recently. The outbreak of *Heterusia* in the Nilgiri-Wynaad reported in the *P. C.*, Vol. VI, p. 689 has, it is hoped, been checked by steady collecting of caterpillars and cocoons. Mr. Nicolls writes of this pest that it is too early to say whether it has been totally eradicated, but he warns others that these caterpillars are capable of doing a considerable amount of damage, more than they are usually credited with, and they seriously affect the vigour of the bush. This pest has been identified by the Government Entomologist as *Heterusia virescens*, and not *H. cingala* as originally stated. The latter species is confined to Ceylon, and the Assam records really refer to *H. magnifica*.

The Use of Ammonia in Rubber Tapping. A correction is necessary in the tables of measures given in these notes on page 15 of the present volume. Two table-spoonsful are equivalent to a fluid ounce and not one as stated. My correspondent on this subject has sent me some estimates of cost of this process based on London quotations. I refrain from quoting these for the present, however, as I hope to persuade him to write an article on this interesting subject.

Checking of Fertiliser Guarantees.—Attention was called to this proposed piece of work on these notes on p. 74. A number of samples have been received, and planters having fertilisers, the guarantees of which they desire to have checked, should send samples in as soon as possible. Attention should be carefully paid to labelling and the information asked for in the note quoted above should in all cases be sent.

Green Bug on Coffee.—There has been an unfortunate outbreak of Green Bug (*Lecanium viride*) on Coffee in South Mysore. The Scientific Assistant for Mysore is on the spot and doing all that is possible to stamp it out at once, but the importance of the matter necessitates a visit of inspection from the Planting Expert who has only just returned to headquarters from a protracted tour in the Pulney Hills and the High Range of Travancore.—R. D. A.

DISTRICT PLANTERS' ASSOCIATIONS.**Anamalai Planters' Association.***(Continued.)***2. The Honorary Secretary's Annual Report and Accounts :**

Membership.—During the year there has been an increase both as regards Estates and private members. On the old basis of subscription the votes carried by estates has increased by 120 and private votes by 4.

Meetings.—There have been 2 General Meetings and 3 General Committee Meetings. There was an average attendance of 11 members at the General Meetings. The General Committee Meetings were always fully attended. At the General Meetings it was very noticeable the way in which the younger members abstained from speaking and this is very much to be regretted. We do not want to see the "old district hacks" brought out at every meeting—"new blood" should have a try as it is only by the younger members coming forward and fearlessly expressing their views that we shall be able to know the true feelings of the district.

Labour.—There has been a considerable improvement this year as regards the *number* of coolies—but as regards the *quality* it is worse than usual.

It is a very debatable question whether the increase in wages, or, the famine rates existing in the low country in June and July, has brought in the extra coolies this year.

Owing to the increase in wages, the cost of working has gone up. The average cooly now is physically incapable of doing for 6 annas the amount of work done 10 years ago by coolies for 3 annas and 3½ annas—and the more pay he gets the less inclined he is to *try* and work.

With tea to pluck, and rubber to tap, and, happily, good prices ruling for both, this increase of pay may be all right—but, had not the markets outside the United Kingdom come to the rescue in their active demand for Indian Teas many of us would have wanted the old 3½ anna man cooly back again—for, we should have been unable to import plucking and tapping women *alone* on to our estates without finding work for their men.

In order to try and bring about a scheme leading towards the combination of labour in the different districts you consented to raise your subscription to the parent Association on the condition that it should bring forward such a scheme in the near future. From reports in the *Planters' Chronicle* it would appear that the Committee appointed to draw up the scheme have had many difficulties to contend with, and it seems doubtful whether they will ever be able to arrive at a scheme that would be adopted by everybody. You were strongly in favour of the Registration Scheme put forward and said it was excellent as far as it went, but thought that it might go much further. It was, however, *something attempted* which is what you want to see done.

Police Patrols.—The thanks of the Association are due to the District Superintendent of Police for placing Police patrols during the coffee crop season and to Mr. S. V. dyanathan, Sub-Inspector of Police—Kotoor for his supervision and checking of the cartmen's passes.

Road and Communications.—The branch road and bridle-paths of the district have now been given over by the P. W. D. to those members directly interested in their up-keep. The thanks of the Association are due to Colonel Ellis, R. E., P.W.D., for helping us.

Hospital and Medical.—A site for the proposed hospital has been felled between Valparai and Monica, but the burning off the same has been delayed owing to the likely risk of danger to the neighbouring property if burnt off now during the dry months. This delay in having the hospital erected is greatly to be deplored. Much suffering has been caused in the district that could easily have been avoided had we had an efficient hospital staff.

Hospital.—In the accounts you will see that Rs.2,400 has been collected on account of the Hospital Fund, and is standing at the credit of that account in the Bank.

Some of you have paid your subscriptions under protest; because Government have not carried out their part of the contract. I have carried out your instructions regarding payments to Government and the recent correspondence I have had on the matter I propose laying before you.

I am glad to say that the newly appointed Assistant Surgeon, K. Ibrahim Khan, appears to be quite a capable man and has been carrying out his work to the satisfaction of members; it was quite a relief to me to get rid of the complaints and correspondence I had in connection with his predecessor.

Transport.—Owing to the growth of the district and the difficulties we experienced in last September and October in obtaining the requisite transport for our grain and supplies caused by the enormous trade that is now being carried on each year in groundnut, between the foot of the Ghát and Coimbatore, this Association considered that the time had now come when we should make an attempt to try and get a transport service of our own, and it was unanimously agreed that we might have a possible remedy for the present mode of transport if we could have an *aerial ropeway* into the district. Messrs. Barber and Pascoe have been interesting themselves on our behalf in this matter and are now having a rough estimate of the cost prepared by Messrs. Walker Sons & Co., of Colombo.

I would call your attention to the vital importance of giving the question your most careful consideration. It would only require a strike amongst the bandymen, a bridge to be carried away by rain on the ghát, or, a violent attack of cattle disease in the low country, and we should be left without any means of getting up supplies.

The roads are quite unsuitable for motor-lorry transport.

Postal Affairs.—The Postmaster-General, Madras, has been addressed by me on several occasions as to the urgent necessity of the district being given a proper Post Office and although I have had no reply regarding the building of a suitable office—the following communication from the Sub-Postmaster, at Valparai, dated 20-1-13 may lead us to hope for the same in the immediate future as it would be ridiculous to expect the postal department to make a combined *Post and Telegraph Office out of the present building*: "I am directed by the Inspector of Post Offices, Coimbatore Circle, to place before you the following, which, I hope, you will move the matter in your meeting. The Valparai Branch Office has been converted into a Sub-Office from the 1st instant 1913. Now the Department intend to make it as a combined office with Telegraph attached. The Department wish to know whether the Association or individual members will be good enough to guarantee the revenue. Hope you will give the matter your immediate attention."

You will remember that the Association was asked to what extent the district would be prepared to guarantee a combined Post and Telegraph Office and what assessment per cultivated acre would be necessary to cover

the proposed figure. You instructed me to write and say that a great deal more information regarding figures was required before anything could be decided and since then I have had no further information on the subject.

S. I. P. Benevolent Fund.—I should like to see everybody supporting this Fund. There are only 5 members now who do not subscribe and I am certain that they have not realised the vast amount of good that this Fund might do in helping some "lame dog," or, his dependents. "over a stile," or they would have, ere this, weighed in with their subscriptions.

Proposed Club.—This is not an Association matter—but it indirectly affects the Association. The matter came up after our last Committee meeting on 7—12—12. Since I have had the honour of being your Honorary Secretary I have felt very reluctant to write to any of you and ask you to have a meeting at your bungalows. It was all right in the days when there were only a few planters in the district but now we have 21 resident members—and more are coming—and a time has now arrived when we should have some public place where we can hold our meetings where men can foregather on holidays and have some amusement.

At present we see little of one another except at the invitation of a few, who, for the occasion, run their bungalows on the lines of a club and many of us realise that this is not fair—that it is imposing on the hospitality of these people, and that it is not, as it should be, for the good-will of the district.

In our own interests, therefore, we should start a District Club soon if only on a small scale to begin with.

Accounts.—The Accounts are now before you and if found correct I would ask you to pass them and to kindly accept my resignation.

In conclusion I wish to thank our Chairman for the willing assistance he has always given me—and also the rest of the members of the Association for the very great consideration they have shown me during the past year.

(Sd.) J. HATTON ROBINSON,
Honorary Secretary, A.P.A.

The Accounts were passed—and it was proposed by Mr. Congreve and seconded by Mr. deSalis, and carried unanimously:—"That both the Chairman's address and the Honorary Secretary's Report be printed with the proceedings of the Meeting."

As regards the matter of "Access to New Estates" commented on in the Chairman's address—it was proposed by Mr. Robinson and seconded by Mr. Congreve and carried unanimously:—"That a Sub-Committee be formed consisting of Messrs. Duncan, Simcock, and Marsh...to draw up a resolution regarding the right of way into the new blocks of land recently granted by Government, and that the resolution be submitted to Government."

Electric Power and Ropeway.—The majority of the Meeting was not in favour of a combined Electrical Scheme and Aerial Ropeway for the district.

As regards the Aerial Ropeway—the Meeting viewed the same with favour and awaited Messrs. Walker, Sons & Co's supplementary Estimate. The Honorary Secretary was requested to forward the views of the Meeting to Messrs. Walker, Sons & Co. and to urge the forwarding of the scheme as soon as possible.

4. *Hospital Site and Future Township.*—Mr. Marsh informed the Meeting that he had heard unofficially that Government had intentions of building at a very early date not only a hospital but also a Post Office and a Travellers' Bungalow and contended that the present site, selected by the Collector of Coimbatore, between the Valparai and Monica Bungalows—on the main road, was unsuitable for the township, as the land available there was insufficient, and contended that the proposed buildings should be erected on the land known as the "old Hospital Site"—situated near by the Paralai-Castlecroft Road,—between the Puthutotam and Castlecroft Bungalows,—and that if these other buildings were to be erected along with a Hospital that this would do away with the present objection to the Hospital being there—namely, 'isolation.'

Mr. Marden said he was agreeable to the old Hospital site being selected—provided that Government would erect *simultaneously with the Hospital* other Public Buildings and the Hon'ble Mr. E. F. Barber had a proxy to the same effect. Mr. Robinson said that if this subject was again going to be opened that in the interests of the south and south-westerly estates of the district he would like to see the future township site selected as far into the district as possible. He said that the district which had only one inlet or outlet commenced about the 20th mile and that the Kalianapandal Estate lower Bungalow was at the 36th mile or 16 miles from the head of the district the bungalow at present furthest east was Perria Kurramallai—about 3 miles from the head of the district.

To send to Valparai for the post now his assistant had to send 12 miles whereas the man on Perria Kurramallai had only to send about 7 miles and that if the "old hospital site" were selected it would be even further from his end of the district. He recognised the fact that his estate could not possibly be a favoured one being at one end of the district but contended that when the "old hospital site" which is within 4 miles of the entrance to the district was chosen it was selected by the Managers of the 5 properties then opened in the district—and all of whose bungalows were within 4 miles of the chosen site—one bungalow being within a mile of it, and that this was quite central for *these* men but that *other* men had come into the district since then and should now get some consideration if the matter was again to be opened up. If a permanent township site was decided upon *close to the entrance of the district*, it meant that the estates situated well into the district would always have trouble with their labour and transport, and, he thought that this point had not been given enough consideration. The Estates furthest from the township, on the outlet side of the district, would always have the advantage in transport and labour—for everything coming up to the town must pass *through* most of the Estates at the head of the district, and very close to the remainder. He considered that a fine central position might even now be got close to the main road, near the 27th mile stone, which was approximately half way between the most eastern and western estates in the district. Mr. Sincock was against the idea of constructing any buildings on the "old hospital site." He contended that the site for the hospital and township had been selected by the Collector and that the Association ought to agree to that site, and not open the discussion again.

Mr. Duncan said he saw the disadvantage the western estates would be at if either the "old hospital site," or the site chosen by the Collector were selected—this latter site being close to his own estate suited him personally but that he would like to see a site agreed upon that would suit everybody. As no definite site could be unanimously decided upon the following resolution, proposed by Mr. Congreve and seconded by Mr. deSalis was put to the

Meeting and carried:—"That the Meeting is agreeable to have a *temporary* hospital built on the site selected by the Collector but that if other buildings are to be built in the district that the Planters be consulted as to the sites for the same."

5. *Cooly Shelters on the Ghât Road.*—In reply to the Collector's letter No. 28 D. B. of 1913, dated 10-1-13 the Meeting were of opinion that the estimate for cooly shelters was excessive, but that members would be willing to contribute toward the cost of the shelters if they were constructed at a reasonable figure but considered that Government should construct these very necessary shelters themselves.

6. *Medical Affairs.*—The reply to the Honorary Secretary's letter of February 10th, 1913 to the D. M. O. was awaited.

7. *Special Magistrate for District.*—A reply to the Honorary Secretary's letter of 10-2-13 to the Collector of Coimbatore was awaited.

8. *Brake Logs on Bandies.*—The Meeting agreed to the Acting District Forest Officer's suggestion to have printed forms in the vernacular, that these should be handed to the bandymen, and that afterwards it was entirely a matter for the Forest Department to deal with. The forms in the vernacular should be as follows:—

Permit the removal of.....Brake poles on.....carts
from the.....Estate issued to.....

Note.—This permit does not cover the removal of any poles in excess of 6 feet in length, and 6 inches in diameter, or the removal of any of the following species namely:—Jack, White Cedar, Red Cedar, or Poompar.

Date..... Signature.....

9. *Labour Questions.*—The following rules were unanimously agreed to:—

1. *Re. Fellers.*—That an agreement be not entered into with Fellers more than for the following season:—

2. *Re. Maistries.*—That no Manager shall within his knowledge, after having made very full inquiries employ or advance labour maistries from neighbouring estates within the Annamalai District without their producing a discharge note.

The Honorary Secretary was requested to get all the District Rules printed and sent to members.

10. *Scientific Department.*—In reply to the U. P. A. S. I. Circular No. 213: The Meeting agreed to continue the Association's original subscription to this fund, i.e. Rs.60 a year—but as regards the Association's present subscription the members were unable to say anything until the next Annual General Meeting of the U. P. A. S. I.

11. *Office-Bearers:*—

The following were elected Office-Bearers for the year:

<i>Chairman</i>	... Mr. G. L. Duncan.
<i>Vice-Chairman</i>	... Mr. B. A. Marden.
<i>Honorary Secretary</i>	... Mr. J. Hatton Robinson.

After the election of the above the proceedings terminated.

(Signed) GEO. L. DUNCAN.

Chairman.

() J. HATTON ROBINSON,

Honorary Secretary.

Wynnad Planters' Association.***Proceedings of a General Meeting held at Meppadi Club,
on March 12th, 1913.***

PRESENT.—Messrs. Briggs, Darkin, Macleod, Milton, Nicolls, (Chairman), G. R. C. Parker, J. C. Parker, Powell, and C. E. Abbott, (Honorary Secretary).

1829. *The Proceedings of last Meeting* were confirmed.

1830. *New Member.*—Mr. G. R. Briggs was elected.

1831. *Shipment of Tea during Monsoon.*—Read letter from the Honorary Secretary to Coast Firms, and replies from Messrs. Parry & Co., acknowledging receipt, and from Messrs. Harrisons and Crosfield (Calicut) saying they had shipped 1,221 cases by Clan Frazer in August last and had received no complaints of the condition of the tea. Proposed by Mr. J. C. Parker, seconded by Mr. Darkin and carried.—“That as we understand there have been recoveries made on account of insurance in regard to the Clan Frazer shipments, the Honorary Secretary be asked to circularize members and find out if this is correct.”

1832. *Delays of Parcel Post.*—Read letter from the Honorary Secretary to the Superintendent of Post Offices, West Coast Division, and his reply saying that instructions have been given to the Calicut Postmaster to improve matters in certain particulars, but that the delays are only occasional. As the general opinion of the Meeting is that the delays are habitual, and there is no sign of improvement the Honorary Secretary was instructed to address the Postmaster-General with a copy of the correspondence. Members are asked to report specific instances to the Honorary Secretary. One example is that of a registered parcel despatched from Calcutta on February 21st by Messrs. Hall and Anderson (No. 4001) was not delivered in Meppadi till March 8th. The time occupied by a letter in transit is only 4 days. Another instance is that of a registered parcel despatched from Calicut (No. 402) on March 29th, and not received in Meppadi till April 1st.

1833. *Roads Coorg Kortikodam.*—Read Memorandum from District Board Engineer. Recorded.

1834. *Pooduppaddy Hotel.*—Rs.50 was voted for repairs to be sent to Mr. Chengaren.

1835. *Scientific Department U. P. A. S. I.*—Read U. P. A. S. I. Circular forwarding copy of a letter from Madras Government, Local and Municipal Department, regarding the contribution to the Scientific Department. Proposed from Chair and carried: “That this Meeting is of opinion that as long as the ‘Scientific Officer Fund’ remains a department of the U. P. A. S. I. this Association is prepared to pay 2 annas an acre to the U. P. A. S. I. on its subscribing area.

1836. *Tea Refuse*—Attention was called to Mr. Anstead's letter and his article in the *Planters' Chronicle*. Members who wish to sell tea refuse for manure are requested to communicate with Mr. Anstead, mentioning the quantity they can probably supply.

1837. *Madras Planters' Labour Law.*—*Non-execution of Warrants.* Read letter from Deputy Inspector-General of Police suggesting that a registry of marks should be kept in the case of all Maistries advanced. Members are requested to attend to this suggestion.

1838. *High Court Ruling.*—Read letter from Mr. Nicolls forwarding High Court Judgment (by Mr. Justice Sadasiva Iyer) upholding the refusal of the Sheristadar Magistrate of Gudallur to further imprison Pongay Maistry who had been twice sentenced for refusal to fulfil his contract under Section 35 of the Madras Planters' Labour Law. Read also letter from Mr. Bownass giving reasons for believing that this judgment is not likely to be upheld on appeal.

The Meeting agreed with the view expressed by Mr. Bownass, and hoped that the judgment would be appealed against. The Association offered to subscribe Rs. 50 towards the costs of the appeal to show that it considers its interests in this matter identical with those of the Nilgiri Planter who prosecuted Pongay Maistry.

1840. *Machinery for Tea and Coffee Estates.*—Read U. P. A. S. I. Circular. The Meeting was of opinion that the Customs duty on this ought to be abolished.

1841. *Sale of Pepper Crops.*—Mr. Nicolls suggested that in future members of this Association intending to sell their standing pepper crops should intimate the fact to the Honorary Secretary, so that the Proprietors of adjoining estates may have the opportunity of purchasing the same and so safeguard themselves against theft and restrict the number of receivers.

A vote of thanks to the Chair terminated the proceedings.

(Signed) J. S. NICOLLS.

Chairman.

() C. E. ABBOTT.

Hon'y. Secretary.

Kanan Devan Planters' Association.

*Proceedings of an Extraordinary General Meeting of the K. D. P. A.
held in the High Range Club, Munnar, on Saturday, the 8th
March, 1913, at 3 p.m.*

PRESENT.—Messrs. C. Fraser. (Chairman), S. H. Paulet, W. O. Milne, D. Mackintosh, G. R. Strachan, Dr. James S. Nicolson, H. L. Pinches, W. L. Ranking, J. S. Hawkins, J. C. Swayne, G. E. Bewley, J. B. Ingram, W. J. Dixon, C. Rowson, A. Blair Hill, W. A. Lee, A. G. Murray, J. M. Bridgman, and E. A. Hughes. (Honorary Secretary.) Visitors: Messrs. A. H. Mead, C. E. L. Ward, R. D. Anstead.

The notice calling the Meeting having been read, it was proposed from the Chair: "That the Minutes of the last Extraordinary General Meeting having been printed and circulated, be taken as read and confirmed." This was carried unanimously.

Mr. Fraser then said:—

Gentlemen,—Before proceeding further with the business of the Meeting I must ask you to pass a hearty vote of sympathy and condolence with Mrs. Inray in her recent sad bereavement. In Mr. Inray, the Association loses one of its oldest and keenest members and I am sure we all feel that we have lost a very good friend and brother planter.

This was agreed to unanimously, all members standing.

The following Agenda was laid off the table:—

- (1). Theni Bridge.
- (2). Kumbham Valley Railway.
- (3). Retention of Planting Expert's Services by U. P. A. S. I.
- (4). Mr. Anstead's Lecture.

The Chairman then said item 1 and 2 might be taken together. The question of the Kumbham Valley Light Railway and the Theni Bridge had been a pressing one for some years past. He was sure all regretted that in spite of their efforts and repeated representations to Government and the S. I. R. authorities there had been little or no result. The less said about the work so far done on the Theni Bridge the better. It was at present a standing disgrace to all concerned. He hoped all would agree that time had come for further steps to be taken to have the matter brought to the notice of the Government of Madras and he, therefore, begged to propose the following resolution:—

"That Peermade Planters' Association be asked to join us in a Deputation to the Governor of Madras to bring to his notice the urgent necessity for bridging the Theni River and for a Light Feeder Railway from the S. I. R. to Kumbhamoath, via Bodinayakur." This was carried unanimously.

It was proposed by Mr. Pinches and seconded by Mr. Lee: "That the K. D. P. A. Deputies be the Chairman and the Honorary Secretary." This was carried unanimously.

The Honorary Secretary was asked to write to the Peermade Planters' Association and ascertain their views. In the event of their agreeing to join us, he was asked to write and ask the District Magistrate, Periyakulam, to join the Deputation, if possible, and to the Planting Member, the Hon'ble Mr. Barber, asking him to arrange to introduce the Deputation to His Excellency the Governor. He was also asked to write to the Agent of the S. I. R. for definite information as to their intentions with regard to the railway, especially in view of the survey which is at present being carried out by them.

The question of retention of the Planting Expert's services by the U. P. A. S. I. was then brought up. After some discussion, it was proposed by Mr. Murray and seconded by Mr. Bewley:—

"That this Association approves of the retention of the Planting Expert's services for a further period of 5 years on the present basis." This was carried unanimously.

The Chairman then introduced Mr. Anstead to the Meeting and said he felt sure that they were all very pleased to see him and felt that they all would be extremely interested in what he had to say to them. He proposed Mr. Anstead should speak to them and afterwards any member who had questions to ask, might do so. Mr. Anstead then delivered an address dealing with several points of local interest. After some discussion, the Chairman proposed a very hearty vote of thanks to Mr. Anstead for his interesting remarks and said that all would look forward to hearing Mr. Anstead again after he has seen more of the district. This was carried unanimously.

A vote of thanks to the Chair terminated the proceedings.

(Signed) ERNEST A. HUGHES,
Hon'y. Sec'y., K. D. P. A.

Kanan Devan Planters' Association.

Proceedings of an Informal General Meeting of the K.D.P.A. held in the High Range Club, Munnar, on Saturday, 22nd March, 1913, at 3 p.m.

PRESENT.—Messrs. C. Fraser, (Chairman), H. L. Pinches, A. J. Wright, W. J. Dixon, A. E. Murray, J. S. Hawkins, G. E. Bewley, S. H. Paulet, William Mackenzie, A. Blair Hill, F. R. Westbrook, G. W. Cole, W. Fraser, J. H. Jeffrey, W. O. Milne, and E. A. Hughes, (Honorary Secretary.) **Visitors:** Messrs. C. E. L. Ward, Rev. J. H. Osmaston, G. H. Strachan, J. H. Bewley, D. V. Crowe, L. H. Ley, H. V. Wright, G. A. Holden, and N. S. Varada Chary, B.A.

The Chairman on rising said he had pleasure to introduce to the members Mr. N. S. Varada Chary, B.A., the District Superintendent of Post Offices, who had kindly come up in connection with the proposed improved Postal Service. He would later on explain to the members his scheme for their information and approval.

They had the pleasure at their last meeting of hearing Mr. Anstead, who, although he had only been in the district for a short time, gave us a most interesting address. Mr. Anstead has now a more extended knowledge of the whole district and its varying condition and he was certain what he had to say to them that afternoon would be of the utmost interest to them all. He called upon Mr. Anstead to address them.

Mr. Anstead informed the meeting that he would first go into the various subjects that had struck him during his tour through the district. He hoped, when he had finished, any one who wished for any further information would ask him, when he would be only too pleased to explain matters and help as far as he possibly could. Mr. Anstead then delivered an address dealing very fully with several interesting questions of local interest and a good deal of discussion followed.

A very hearty vote of thanks to Mr. Anstead for his address and the trouble he had taken was then carried unanimously.

Mr. Anstead then thanked the Association for their kindness and hospitality individually and as a body during his tour.

Mr. N. S. Varada Chary then addressed the meeting and explained very fully his scheme for bringing the mails into the district by the Ropeway and Tramway, instead of by Runners as at present, which gave the members the advantage of a day's earlier delivery of the mails. He pointed out that as the Ropeway did not run on Sundays it would be impossible to have the parcels carried on that day. He, therefore, asked the members of the Association if they had any objection to the Parcel Mail being detained at Bodinayakanur on Sunday and despatched the next day. After some discussion, the following Resolution was put from the Chair and agreed to unanimously.

"That this Association unanimously approves of the proposal that parcels should be kept on Sundays at Bodinayakanur Post Office and delivered the next day."

Mr. Varada Chary then went on to explain a proposal for improving and expediting the present delivery of parcels from the local Post Offices and this also met with the unanimous approval of the members of the Association.

The Chairman then proposed a very hearty vote of thanks to Mr. Varada Chary for all the trouble he had taken in endeavouring to meet the wishes of the Association, with reference to the Postal arrangements and for the improvements that his scheme would introduce when it came into force. This was carried unanimously.

A vote of thanks to the Chair terminated the proceedings.

(Sd.) ERNEST A HUGHES, *Hon'y. Secy. K. D. P. A.*

AGRICULTURAL DEVELOPMENT IN THE UNITED KINGDOM.

Speaking at the annual dinner of the Farmers' Club on Tuesday, December 10, Mr Runciman, President of the Board of Agriculture and Fisheries, referred to the assistance which the Development Commissioners propose to give to agricultural research. In the course of his remarks, he said:—"It was not enough merely to adopt a policy of slaughter, scheduling areas, and so forth. They should adopt so far as possible all the services that science could supply. They must give their research institutions, universities, and colleges the needful to ascertain more and more the nature of their most dangerous diseases. He had received permission only that day to announce that one of the schemes he had been enjoining for some months in the country had so far met with the approval of the Development Commissioners that they would shortly recommend to the Treasury a release from the Development Fund moneys for the following objects. First of all to provide in every one of what were now called the provinces for the purpose of agricultural education, the services at the headquarters of those provinces of men concerned with advice as to soils, crops, and so forth, but who should be concerned also with live stock; that each one of these men should be an organizer or supervisor, to organise in that province a live stock scheme which would be described in further detail. The Commissioners were also prepared to enable them, with an annual sum, to have engaged in their office a man of the highest class, who could not know everything about every branch of live stock, but, by general knowledge, would be able to give administrators advice, which at present they were without. Thirdly, premiums would be provided from the development Funds for the breeding of heavy horses, Shires, Clydesdales, Suffolk Punches." (From *Nature*.)—*The Agricultural News*.

The Sterilisation of Seeds.

Numerous methods are in use for destroying the micro-organisms which occur on or in the coats of seeds. The most general method consists in washing the seed with an antiseptic, such as corrosive sublimate. A new process, which appears to give yet more satisfactory results, is described by Messrs. PINORY and MAGRON in the *Bulletin de la Société Botanique de France* (Vol. 59, 1912, p. 609). This process, which has been employed also by others, consists in immersing the seeds in commercial hydrogen peroxide. According to the observations of the authors cited, hydrogen peroxide is efficacious in destroying micro-organisms, and produces no harmful effect on the seeds, even though the latter be soaked in it for many hours. Messrs. Pinory & Magron state, moreover, that hydrogen peroxide exercises an accelerating influence on germination. Peas treated with the reagent began to grow a day-and-a-half before similar untreated seed, and seed of *Orobanchus tuberosus* treated previously with peroxide germinated in 8 days as against 28 days taken by untreated seed. These facts, if they prove to be generally true, are of considerable importance, not only from a scientific and theoretical point of view, but also from that of practice. To give but one illustration, the seeds of many grasses germinate with extreme slowness: if they could be made to germinate in the course of a few days, not only would time be gained but loss from birds and ground animals would be reduced.—*The Gardeners' Chronicle*.

German Government to act against Valorization.

A Report from Berlin, dated January 14, stated that the German Government was asked that day to take immediate measures to counteract the artificial dearthness of coffee brought about by the Brazilian valorization. The Budget Committee of the Imperial Parliament passed a unanimous resolution calling on the Government to take action.—*Simmons's Spice Mill*.